

REMARKS

In the Office Action, mailed March 26, 2003 the Examiner asserted that the application contains seven groups of inventions, which are not so linked as to form a single general inventive concept under PCT Rule 13.1. The seven groups are as follows:

- (I) Group I, claim(s) 1-4, 17, 25-26, 40 and 46, drawn to a polynucleotide encoding cellulose synthase, a vector and transgenic plant comprising said polynucleotide.
- (II) Group II, claim(s) 5-7, and 41, drawn to a cellulose synthase promoter or a functional fragment thereof, a vector and a transgenic plant comprising said promoter.
- (III) Group III, claim(s) 8 and 18, drawn to an isolated cellulose synthase and a polypeptide comprising UDP-glucose binding domain of a cellulose synthase.
- (IV) Group IV, claim(s) 9-16, 19-24, 27-31, 35, 42-43 and 45, drawn to a method of altering plant growth by expressing a cellulose synthase in sense or antisense orientation.
- (V) Group V, claim(s) 32, drawn to a method of causing stress-induced gene expression with a cellulose synthase promoter.
- (VI) Group VI, claim(s) 33-34, drawn to a method for determining a positive mechanical stress responsive element (MSRE) in a cellulose synthase promoter.
- (VII) Group VI, claim(s) 36-39, drawn to a method of increasing expression of a cellulose synthase by expressing a cDNA encoding a protein that binds to MSRE in a transgenic plant.

Also, the Examiner asserted that Group I is allegedly taught by the prior art, as evidenced by Arioli et al., (WO 98/00549), which teaches an isolated nucleotide sequence encoding a cellulose synthase and transgenic plants expressing cellulose synthase. The Examiner further asserted that the isolated nucleotide sequence disclosed by Arioli et al., inherently comprises the "fragment" of SEQ ID NO:1 or 4 as claimed in claim 1. The

Examiner also asserts that Arioli et al., discloses a method of altering cellulose synthase level in plants by expressing a nucleotide sequence encoding a cellulose synthase in sense or antisense orientation.

At the outset, Applicants direct the Examiner's attention to the fact that concurrently with the filing of this response to the restriction requirement, a Preliminary Amendment has also been submitted to the USPTO for reasons of clarity. The concurrently filed Preliminary Amendment, includes amendments to the specification and to the claims of the subject Application. No new matter was introduced into the claims or the specification.

Furthermore, Applicants provisionally elect, with traverse, Group I, corresponding to claims 1-4, 17, 25-26, 40 and 46, drawn to a polynucleotide encoding Cellulose Synthase, a vector and transgenic plant comprising said polynucleotide. Applicants respectfully submit, however, that the restriction requirement is improper, and request reconsideration thereof.

Applicants submit that the restriction requirement is improper because the claims are simply different aspects of the same disclosed subject matter and are linked by a single special technical feature, i.e., Cellulose Synthase (CesA) and would not present a serious burden on the examiner in respect to searching. The cellulose synthase polynucleotide, polypeptide, promoter and methods of altering cellulose content are all closely related to each other since they all directly relate to cellulose synthase expression. CesA polynucleotide was used to derive the polypeptide sequence, and polynucleotide was used to isolate promoter and CesA and promoter were used in transforming plants. As such, a single search directed to Cellulose Synthase involved in plants would readily cover all claims.

Applicants respectfully further submit that the Examiner's suggestion that the inventions of Groups I-VII are unrelated is without technical basis. There is no evidence on the record to substantiate either a separate classification, separate status in the art, or different field of search for the alleged seven separate inventions. In fact, under the definition of unity of invention for an international application, PCT 13.2, claims all of the presently pending claims involve one or more of the same or corresponding special technical features, i.e., Cellulose Synthase.

Furthermore, Applicants direct the Examiner's attention to Annex B of Appendix A1 of the MPEP entitled "Administrative Instruction Under The PCT" recites, examples and guidance, in part, as to what particular cases are considered to have acceptable unity of invention. Applicants submit that the inventions in Groups I-VII all possess unity of invention. Expression of the Cellulose Synthase polynucleotide sequence in a host results in the production of a Cellulose Synthase polypeptide which is determined by the corresponding

polynucleotide sequence. Also, the production of the Cellulose Synthase polypeptide in the host is regulated by the Cellulose Synthase polynucleotide promoter sequence elements. Furthermore, the claimed methods of altering expression of Cellulose Synthase in a host depend on use of either the Cellulose Synthase polypeptide or the polynucleotides. The polypeptide and the polynucleotide sequences exhibit corresponding special technical features. Therefore, unity between Groups I-VII should be accepted.

Furthermore, assuming *arguendo* that the groups of inventions are not so linked by a single general inventive concept, Applicants submit that restriction would still not be appropriate in this case. The Manual of Patent Examining Procedure ("MPEP") states that:

If the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it includes claims to distinct or independent inventions. (MPEP § 803).

Applicants respectfully submit that all claims of the present application could be examined together without placing any serious burden on the USPTO. The claims of Groups I-VII are so inextricably related to one another that, for the sake of administrative efficiency for the Patent Office, all of the claims should be examined in a single application. All claims contain reference to Cellulose Synthase and thus are directed to various aspects of Cellulose Synthase (i.e., polynucleotide, polypeptide, promoter and methods of altering cellulose synthase expression). A complete search of the prior art relating to this common feature would necessarily require a search of the subject matter of all seven groups together. Thus, Applicants respectfully submit there would be no serious burden on the Examiner if restriction were not required.

In summary, Applicants respectfully request reconsideration and withdrawal of the restriction requirement. Applicants also submit that the present application is in condition for allowance. A favorable action thereon is earnestly solicited. Should the Examiner feel that any other point requires consideration or that the form of the claims can be improved, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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